

WHAT IS CLAIMED IS:

1. An apparatus for supplying network services over fiber optic cable to a particular building, the apparatus comprising:

 a service pipe that conveys gas between a gas main and a gas meter for the particular building;

 a flexible tube disposed inside the service pipe, the tube sealed at each end to an outside surface of the service pipe at a pressure fitting for providing access to an inside of the tube; and

 a fiber optic cable disposed inside the flexible tube, with each end of the fiber optic cable outside the service pipe.

2. The apparatus of Claim 1, wherein the flexible tube does not leak at an operating gauge pressure for gas between the tube and an inside of the service pipe.

3. The apparatus of Claim 1, wherein the pressure fitting does not leak at an operating gauge pressure for gas between the tube and an inside of the service pipe.

4. The apparatus of Claim 1, wherein:

 a first pressure fitting, at one end of the flexible tube, is at a first location convenient for connecting the fiber optic cable to the particular building; and

 a second pressure fitting, at a different end of the flexible tube, is at a second location convenient for connecting the fiber optic cable to a network cable.

5. The apparatus of Claim 1, wherein a diameter of the service pipe is less than about six inches.

6. A method for pulling fiber optic cables through gas service pipes, the method comprising the steps of:

stopping gas flow from a gas main to a service pipe that conveys gas between the gas main and a gas meter for a particular building;

joining to the service pipe, at a first location convenient for connecting fiber optic cable to the particular building, a first nipple that provides for a flexible tube a pass way between an inside of the service pipe and an outside of the service pipe;

joining to the service pipe, at a second location convenient for connecting fiber optic cable to a network cable, a second nipple that provides for the flexible tube a pass way between the inside of the service pipe and the outside of the service pipe;

feeding the flexible tube through a catch nipple of the first nipple and the second nipple after passing the flexible tube through a different nipple of the first nipple and the second nipple and through the inside of the service pipe;

sealing the flexible tube to the first nipple and the second nipple for pressures up to a predetermined maximum pressure; and

feeding a fiber optic cable through the flexible tube.

7. The method of Claim 6, wherein a diameter of the service pipe is less than about six inches.

8. The method of Claim 6, wherein a diameter of the service pipe is greater than about one inch.

9. The method of Claim 6, further comprising the step of cutting an opening into the service pipe, the opening sufficient for reaching the flexible tube inside the service pipe and manipulating the flexible tube into the catch nipple.

10. The method of Claim 6, further comprising the step of evacuating gas from the service pipe after said step of stopping the gas flow and before said steps of joining the first nipple and joining the second nipple.

11. The method of Claim 6, further comprising the step of restoring gas flow into the service pipe after said steps of sealing the flexible tube, joining the first nipple, and joining the second nipple.

12. The method of Claim 9, further comprising, before said step of restoring the gas flow, performing the step of sealing to the service pipe a component that covers the opening for pressures up to the predetermined maximum pressure.

13. The method of Claim 12, wherein the component that covers the opening includes the catch nipple.

14. The method of Claim 12, wherein the component that covers the opening includes a fitting and two couples.

15. The method of Claim 6, wherein the predetermined maximum pressure is in a range from about 75 pounds per square inch, in gauge pressure, (psig) to about 100 psig.

16. The method of Claim 11, wherein said step of feeding the fiber optic cable through the flexible tube is performed after said step of restoring the gas flow.

17. The method of Claim 11, further comprising replacing the fiber optic cable passing through the flexible tube after said step of restoring the gas flow.

18. The method of Claim 9, said step of cutting the opening further comprising removing a longitudinal portion of the service pipe.

19. The method of Claim 9, wherein:
the first nipple is the catch nipple;
said step of joining the first nipple is performed after said steps of cutting the opening and feeding the flexible tube through the catch nipple; and
said step of joining the first nipple further comprises
covering the opening with a component including the catch nipple, and
sealing the component to the service pipe for pressures up to the predetermined maximum pressure.

20. The method of Claim 9, wherein:

the second nipple is the catch nipple;

said step of joining the second nipple is performed after said steps of cutting the opening and feeding the flexible tube through the catch nipple; and

said step of attaching the second nipple further comprises

covering the opening with a component including the catch nipple, and

sealing the component to the service pipe for pressures up to the predetermined maximum pressure.

21. The method of Claim 6, said step of joining the first nipple further comprising sealing the first nipple to the service pipe for pressures at least up to the predetermined maximum pressure.

22. The method of Claim 6, said step of joining the second nipple further comprising sealing the second nipple to the service pipe for pressures at least up to the predetermined maximum pressure.

23. The method of Claim 6, further comprising accessing the first location without cutting into a roadway that is used for the passage of motor vehicles.

24. The method of Claim 6, further comprising accessing the second location without cutting into a roadway that is used for the passage of motor vehicles.

25. A method for supplying network services over fiber optic cables to a particular building, the method comprising the steps of:

sealing, for pressures up to a predetermined maximum pressure, a flexible tube in a service pipe from a first point proximate to the particular building to a second point proximate to a network cable, wherein the service pipe conveys gas between a gas main and a gas meter for the particular building;

feeding a fiber optic cable through the flexible tube;

connecting a first end of the fiber optic cable adjacent to the first point to equipment in the particular building; and

connecting a second end of the fiber optic cable adjacent to the second point to the network cable.

26. The method of Claim 25, further comprising the step of obtaining rights for sealing the flexible tube in the service pipe from a party having property rights over the service pipe.

27. The method of Claim 25, further comprising the step of charging users of the equipment in the particular building for transferring data over the fiber optic cable.